
स्वचालित ग्रोसिंग स्टेशन — विशिष्टि

**Automated Grossing
Station — Specification**

ICS 11.140

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BUREAU OF INDIAN STANDARDS
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FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards after the draft finalized by the Anatomy and Forensic Sciences Equipment Sectional Committee and approval by the Medical Equipment and Hospital Planning Division Council.

The automated grossing station is a device used to inspect pathological specimens with the bare eye to obtain diagnostic information, while being processed for further microscopic examination.

The composition of the Committee responsible for the formulation of this standard is given in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

AUTOMATED GROSSING STATION — SPECIFICATION

1 SCOPE

This Indian Standard specifies the essential requirements of automated grossing station meant to inspect pathological specimens with the bare eye to obtain diagnostic information, while being processed for further microscopic examination.

2 REFERENCE

The standards listed below contain provisions which, through reference in this text, constitute provision of this standard. At the time of publication the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No./Other Publications</i>	<i>Title</i>
1068 : 1993	Electroplated coatings of nickel plus chromium and copper plus nickel plus chromium — Specification (<i>third revision</i>)
5228 : 1985	Method of testing corrosion resistance of electroplated and anodized aluminium coating by copper accelerated acetic acid salt spray (CASS) test (<i>first revision</i>)
6911 : 2017	Stainless steel plate, sheet and strip — Specification (<i>second revision</i>)
16459 : 2016/ISO 17557 : 2003	Plastics — Film and sheeting — Cast polypropylene (PP) films
IS/ISO 62304 : 2015	Medical device software — Software life cycle processes
IS/IEC 61010-1 : 2010	Safety requirements for electrical equipment for measurement, control and laboratory use: Part 1 General requirements

3 CONSTRUCTION AND COMPONENTS

The typical components of automated grossing station are as given below.

3.1 Structure

3.1.1 The structure shall be made completely up of Stainless Steel of grade X04Cr17Ni12Mo2 or X04Cr19Ni9 of IS 6911 with a minimum thickness of 2.0 mm for table plate and 1.5 mm for other parts.

3.1.2 The recommended overall dimension shall be 2 000 mm × 1 000 mm × 1 900 mm.

3.1.3 The structure shall be floor mounted with an approximate hydraulic height adjustment facility from 750 mm to 1050 mm, programmable for different users.

3.1.4 Ergonomic knee space adjustments and wheel chair accessible design shall be taken care of during overall designing of the structure for the purpose of seated working height.

3.1.5 The Automated Grossing Station shall be provided with an electric cord and plug and suitable for 220 volts, 50 Hz, AC supply, single phase electric power input/supply.

3.2 Work Station

3.2.1 The work station shall be flat without any deformities and made up of stainless steel of grades X04Cr17Ni12Mo2 or X04Cr19Ni9 of **IS 6911** with or without perforated grid plates.

3.2.2 The work station shall be provided with polypropylene (*see* IS 16459/ISO 17557) dissection board with steel measuring scale of desired dimension and a magnetic tool bar to help preserve dissecting knives and scalpels when in use.

3.2.3 The workstation shall be provided with anti-splash transparent slide out covers for protection of the operators from liquid splattering's and bio-hazards.

3.3 Basin, Tanks and Containers

3.3.1 Wash Basin

3.3.1.1 The wash basin shall be of stainless steel of grades X04Cr17Ni12Mo2 or X04Cr19Ni9 of IS 6911 with recommended dimension of 400 mm × 400 mm × 200 mm.

3.3.1.2 The wash basin shall be sound attenuating insulated, seamless welded, free from sharp edges and well-polished with provision for handling overflow.

3.3.2 Formalin Waste Drain and Storage Tank

3.3.2.1 A fresh formalin dispenser with a storage tank of minimum capacity of 10 litres and waste formalin tank of minimum capacity of 10 litres shall be provided with safety valve.

3.3.2.2 Service door and telescopic shelf shall be provided for formalin tanks.

3.3.2.3 A formalin waste drain of size 85 mm × 85 mm covered by fine screen shall be provided.

3.3.2.4 A foot switch shall be provided for synchronised inflow of formalin to the working table during inspection procedures.

3.3.2.5 Formalin tanks can be installed at a required for gravity flow of formalin to the workstation or at the base of the station with a pump facility for inflow and outflow of the formalin.

3.3.3 Ventilated Waste Container

A ventilated waste container with sliding lid on table plate shall be provided.

3.4 Camera and IT Support

3.4.1 Digital SLR Camera

A digital SLR camera with 18-55 lens, CMOS sensor, minimum 16 GB card for recording good quality of photographs with computer interface with provision of HDMI cable shall be provided.

3.4.2 Video Camera

A camera shall be suitable for purpose of recording grossing steps with adequate resolution shall be provided.

3.4.3 Digital Voice Recorder

An audio recorder, a DSS Player, a flex arm microphone and dictation software for shall be provided for recording.

3.4.4 A camera mounting facility shall be provided with an adjustable fixture to hold the camera securely.

3.4.5 A foot pedal control may be provided to enable hands free operation of major camera functions.

3.4.6 Digital measurement of grossing specimens shall be facilitated compatible with suitable PC with software.

3.5 Illumination

3.5.1 The working area of the automated grossing station shall be properly illuminated with following components.

3.5.2 A minimum of four LED lamps with dimmer switch to be mounted on the top of the working table.

3.5.3 An incandescent light with 3x magnifier shall be mounted on the flexible arm.

3.5.4 A built-in LED lighting can be supplemented, if required.

3.6 Flow and Drainage System

3.6.1 The station shall have flow of both cold water and hot water with a provision for mixing the both as required for inspection and dissecting purpose. A mixing tap to be provided with elbow lever and extendable shower hose of 1.5 m with a shower head.

3.6.2 A three sided perimeter rinse of the dissecting area to be provided for proper flow of water below the work area.

3.6.3 A drainage system to be provided for circulating cold water underneath the working area with cut off valve.

3.7 Exhaust duct

3.7.1 The room where the automated grossing station is installed shall contain proper exhaust duct system which will be connected with building ventilation system for removal of formalin fumes, contaminated air, etc. that are generated during the inspection and dissecting process.

3.7.2 The automated grossing station shall have downdraft and rear extraction facility.

3.8 Accessories

The automated grossing station may be supplied with the following accessories as per agreement between manufacturer and purchaser

3.8.1 Knife Sharpener

Provision for sharpening, honing and stropping and polishing of knives shall be made for razor sharp edges.

3.8.2 Hand Held Bone Saw

Autopsy saw with bone vacuum dust collector having HEPA filter shall be provided. Autopsy saw shall have 3 metre cord and with blades and accessories:

- a) Round blade without arbour (65 mm);
- b) Section blade without arbour (65 mm); and
- c) Standard saw arbour.

The saw shall be able to be connected to the bone vacuum dust collector. Bone vacuum dust collector will contain vacuum nozzle, disposable filter cartridge (HEPA Filter) and 3 metre power cable.

3.8.3 Paper Towel Holder

A paper towel holder made of stainless steel may be provided at suitable place.

3.8.4 Eye Wash Drench Assembly

It should have a flip down way to remove eye contaminants.

3.8.5 Hands Free Soap Dispenser

A deck or wall mounted hands free soap dispenser be provided with a pump mechanism to provide quick and precise dispensing.

3.8.6 Adjustable and Stationery Shelving

The shelves shall be made of stainless steel sheet of grade X04Cr17Ni12Mo2 or X04Cr19Ni9 of IS 6911 to keep accessories.

3.8.7 Writing Platform

A writing platform with a lift over storage drawer shall be provided for documentation purpose.

3.8.8 Hanging Digital Autopsy Scale

A hanging digital autopsy scale with scale pole and bracket factory fitted to weigh specimens of 0.1 Kg to 15 Kg. The Scale Pole height should be adjustable for 360 degree turning ability.

3.8.9 Document Holder

A document holder shall be mounted on the table to store documents away from any fluids and risk of damage.

3.8.10 Glove Box Holder

A glove box holder shall be provided for storage of gloves used for protection from any infection and contamination during inspection of pathological specimens.

4 TEST

4.1 The corrosion resistance of the electroplated/ galvanised parts or components of the automated grossing station and other components shall comply to IS 1068 or IS 5528 (service grade 3).

4.2 The automated grossing station shall be compliant with IS/IEC 61010-1 covering safety requirements for electrical equipment for measurement control and laboratory use.

4.3 The automated grossing station shall be stable while working without rattling.

5 INSTRUCTIONS FOR USE (USER MANUAL)

Each automated grossing station shall be accompanied by an operating manual which shall contain the following information:

- a) Complete operating instructions and installation procedure including positioning;
- b) Instruction dealing with general usage, cleaning and periodic maintenance; and
- c) Safety precautions to be exercised during operation.

6 PACKAGING AND MARKING

6.1 Each automated grossing station automated shall be marked with:

- a) Identification of manufacturer;
- b) Code and serial number of the equipment;
- c) Installation date; and
- d) Read instructions before use.

6.2 Packaging

Each automated grossing station shall be packed as agreed to between the purchaser and the manufacturer.

6.3 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standard Act, 2016* and the Rules and Regulations framed thereunder, and the product(s) may be marked with the Standard Mark.

ANNEX A

(Foreword)

COMMITTEE COMPOSITION

Anatomy and Forensic Sciences Equipment Sectional Committee, MHD 23

<i>Organization</i>	<i>Representative(s)</i>
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SCIENTIST 'C' (MHD), BIS

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